

This month we look at what might be involved in taking an early Seven back to its original glory. John Watson is our guide:

THE STORY OF THE SEVEN

Chapter 11: Restoring a legend

THIS CHAPTER IS meant as a guide only to assist in the restoration of the first series Seven made by Lotus, 1957 to 1960. A project of this kind should be enjoyed rather than treated as a task. If carried out continually, at least two or three years should be allowed to complete the work. In money terms, depending on how much of the work you carry out yourself, you should budget for about £10,000–15,000 to achieve a good result. Restoration of these cars is not a commercial proposition but more of a 'labour of love'! You have been warned!

Each of the four Series of Lotus Seven uses some different parts: whilst it is possible, in places, to use later parts, I only deal with original specification and do not encourage modernisation.

In this chapter we consider the original Seven, now known as the Series One.

Three basic rules

These apply to the restoration of any car.

1: You will be removing the chassis plate from the chassis body unit: the plate should be placed with the registration papers and the chassis clearly labelled or marked with the chassis number in several places. How many times have the plate and the chassis become separated and the car's identity lost forever?!

2: Take plenty of photographs before restoration commences and also as it proceeds. Generally, there are never enough photographs. Not only will they be useful as the project continues but they will also become part of the car's history when it is finished.

3: Never throw anything away. Some things may have to be cleaned, made good and re-used and others may be required as a pattern for newly made parts. Label larger items and use clear plastic bags for smaller ones. Remember a disassembled car takes up much more room than one that is up and together,

so organisation and tidiness is important unless you want to be continually turning a pile over looking for parts.

Chassis:

The Series One chassis frame is very different to the later versions. Specialist restorers of these frames are usually more associated with Lotus Elevens which are similar.

Chassis tubes tend to rust from the inside so inspection with a penlight torch in dull light is advised. Usually the tubes most likely to be effected are those at the bottom of the frame.

Any identity tabs or numbering should be preserved as this is important to the car's history. Whilst the frame is bare it may be considered prudent to consider seatbelt mountings and even a rollover bar (*see Additional safety items*).

Chassis colour is important as Lotus used different shades of grey over the years. Generally the early cars used lighter shades. The paint used was probably ex-MOD as this was good in quality and of plentiful supply.

Body:

All the body panels should be aluminium. Unless destroyed or very badly damaged original panels should be preserved, even if some scars cannot be removed. Nose cone and front and rear wings are all very expensive to

make or reshape, requiring 'double curvature' work and skill in the use of the English Wheel and sheet aluminium welding. There is no piping between the rear wings and the body.

Front suspension:

In most respects the Seven's front suspension did not change much between 1957 and 1989. In fact, the same Quinton Hazell top link was used by Caterham in the early 1990s and is still available today. Lower wishbones should be de-bushed, stripped of paint, thoroughly checked and repaired or remade as necessary. This work is best carried out by the chassis specialist. New metalastic suspension bushes are still readily available.

The early cars used trunnions from the Standard 10 with large cap-nuts and integral grease nipples which are quite different from the later Triumph Herald items.

Armstrong dampers are no longer made, but Spax make good replacements. Dampers with adjustable platforms may be useful if you feel the need to 'play' with the ride height of the car.

Rear axle and suspension:

The Nash Metropolitan rear axle is very similar to the Mk I 'frog-eye' Sprite item except that the drum brakes are an inch bigger in diameter. The differential is BMC 'A' Series with a wide choice of readily available ratios, but care should be exercised when contemplating higher ratios as the propshaft may hit the rear sidewall of the transmission tunnel with the offset of some differentials.

The double trailing arms and diagonal bracing should be treated in the same way as the lower front wishbones (above). The rear dampers are more tricky than the front ones as



below:

as found (complete with flared wings and later cast alloys); behind is Lotus Mk II



they are NOT the same as the those used on the later Sevens. To avoid problems either get the supplier to show you both Series One and Series Two/Three types together or take an old one as a pattern.

Steering:

The steering geometry is different from the later cars as the steering arms are behind the centre of the front wheels rather than in front. This steering setup requires that the rack is from a left hand drive car placed upside down. (Driving this setup with a RHD rack could prove very entertaining!)

Viewed from the side of the car, the angle of the steering wheel is parallel to the angle of the dashboard and the column enters the engine bay between the clutch and brake pedals. There are two Mollart joints allowing the column to route alongside the engine and onto the pinion housing on the rack. These joints will need renewing.

At an early stage it maybe useful to know that the height of the rack cannot easily be adjusted for 'bump steer' as it is mounted with horizontal bolts and not the 'shimmable' vertical ones as on later cars.

Wheels and tyres:

The wheels on many of these cars were replaced with 13" diameter.

The original 15" diameter 'Turner' wheels which were made by Rubery Owen are now very difficult to source.

The other 15" wheels that were used were TR3 disc wheels (1960) and MGA 48-spoke wire wheels (fitted as an optional extra from 1958 on). The former are relatively cheap, but a bit ugly; the latter are expensive, difficult to clean, but look superb.

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chassis and engine bay detail, before, during and after restoration



The TR3 items will require two special BMC / Triumph PC4 aluminium adaptor rings made up for the rear.

The wire wheels, whilst only about £67.00 (+VAT) each, also require knock-on spinners, spline adaptors and special nuts which nearly doubles the total price.

In addition, some engineering may be required to ensure that the wheels seat properly on the spline adaptors with the nuts done up. It is important that the chosen wheels and tyres are on the car when the body is made.

Engine and gearbox:

Correct engine/gearbox combinations for Series One cars are FWA or FWB single overhead camshaft Coventry Climax and A30 4-speed gearbox; 948cc overhead valve 'A' Series BMC and 4-speed gearbox; or 1172cc sidevalve 100E Ford and 3-speed gearbox.

Each type of engine has its own mounting arrangement. Clearance can be an issue under the bonnet and to the drivers footbox.

Exhaust system:

Mild steel is the correct material for the exhaust system; however stainless may be found to be more practical. The pipework is of a much smaller diameter than modern systems so check that the fabricator has the equipment to carry out the work for you.

Electrics:

Car restorers tend to rush electrics. Lotus Seven electrics can hardly be described as complex – and bodging this part of the job may give way to an expensive fire soon after the project is completed, so beware! Although time consuming, the making of a loom can be both rewarding and therapeutic. Traditional separately insulated spade and bullet connectors should be used.

Lighting:

Driving lights were one Lucas SFT576 spotlamp and SLR576 foglamp dipping from both working to just one. Nowadays both lenses have to be the same and with the help of a Lucas dual element modification, a better and more conventional system can be achieved.

Instruments:

If the correct AC instruments are not still with the car then they could be sourced at autojumbles

or on eBay. However, don't let lack of the correct instrumentation delay completion of the project as temporary ones can be fitted until the correct items are found.

There are many good specialist instrument restorers if required.

Trim:

Trim for any Lotus Seven is fairly basic, but, for the first of the model, it is even simpler. The first trim material was 1950's red 'Vyanide', a spray coated canvas, and the second was a much-improved red PVC cloth.

There is red trim covering to the aluminium dashboard, to the transmission tunnel top, to the seat squabs and back and to the side panels. The side panels were originally fibreboard, but thin aluminium is a better backing as it does not buckle with damp.

White piping is only used to the sides of the seat squabs and to the edges of the seat back.

Weather equipment:

No Series One car left the factory with sidescreens. In those days 'side-skirts' or 'side-curtains' were used. The top of these went from above the dashboard to above the rear wheels and afforded surprisingly good weather protection.

The factory could supply a '3-zip tonneau' which allowed for full-tonneau, half-tonneau or one, two or no side skirts.

A boot envelope and a hood or soft top could also be supplied.

Additional safety items:

Windscreens really need wipers and washers. The overhead (Land Rover-type) wipers are less than satisfactory, especially at speed. 'America' cars had scuttle-mounted wipers from the Type 14 Elite which can be fitted fairly easily.

Direction indicators are important if only to avoid confusion for modern-day motorists. Mini-style indicator lamps should be fitted at the front and Lucas L539 to the rear.

In addition, an audible indicator under the dashboard may be considered advisable.

Seatbelts should be considered, especially if children want to have a ride in Dad's car! Whilst the chassis frame is being restored, an extra tube can be fitted between the top of the rear uprights and addition brackets can be welded for the lower mountings for a 4-point harness arrangement.

If you wish to drive circuits, a FIA rollover bar should be designed and fitted.

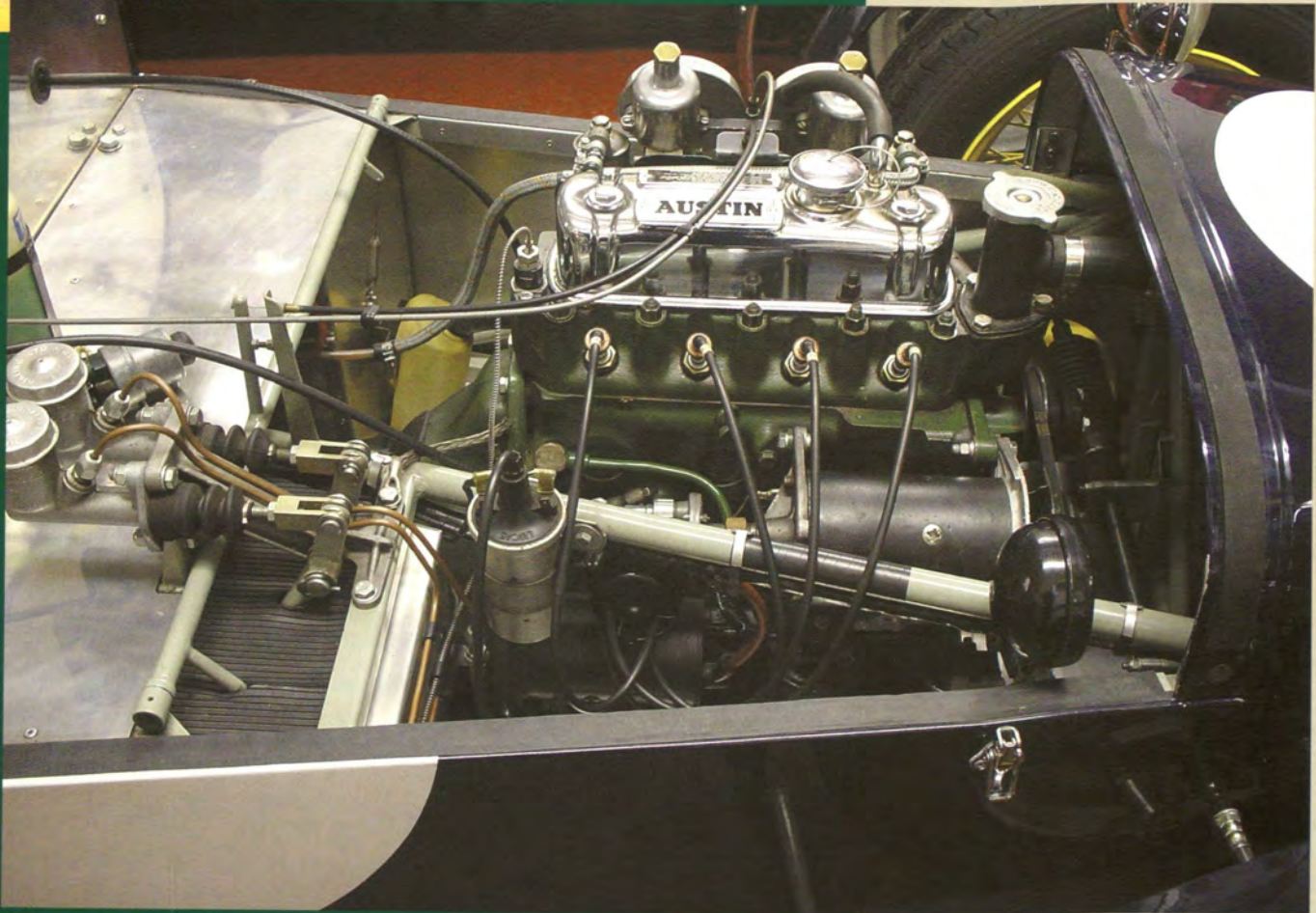




left and above:
the more modern interior, steering wheel
and dashboard are put back to an authentic
specification



left and below:
the engine bay and engine as found (left)
and below, restored with 'A' Series engine



above:
the finished item... a Series One, carefully
restored and looking respendent



Next month, **Chapter 12:**
The cost-efficient Series Two

Sources and further reading:
Lotus Seven – Preparation, Restoration,
Maintenance by TONY WEALE (1991)
Lotus Seven by Jeremy Coulter (1986/1995)